

“Rolled Up” List of Policy Options
All Sectors – April 24, 2007

(See last page for sector abbreviations)

Sector	ID	GHG and Clean Energy Goals/Policy Options for States	Tracking	Comments
AF	1	Ethanol production		Rename as biomass/alternative fuel; include ethanol, biodiesel, and other fuels
AF	7	Manure Management		This is the broad, umbrella category; combine with composting, manure, manure digesters
AF	9	Change feedstocks		
AF	10	Conservation tillage/No-till (sequestration and reduced energy use)		relabel as innovative soil management and include summer fallow, winter cover crops, crop rotation
AF	13	Improve water & nutrient use		
AF	15	Convert land to grassland or forests		lands are taken out of agricultural production
AF	16	Preserve open space/agricultural land		add working forest lands as protected? --or keep forest land options separate
AF	19	Organic Farming		phase II. There is a growing market for this, can include integrated pest management; relates to farming--but can't come from cows using antibiotics or other chemicals, need to find out more about it
AF	21	Protection of forestland by reduced conversion to nonforest uses (urban, suburban, and rural lands)		rename as carbon management?; WUI protection program; Forest Legacy program; Quality Growth Fund (promoting existing WUI and Federal and State open lands protection/conservation easement programs)
AF	22	Afforestation and or restoration of nonforest land (including urban, suburban and rural lands)		forestry is tricky: it can sequester as well as release carbon, and can contribute to warming/cooling through absorption/reflection; alert the Governor that this is an area of debate
AF	23	Promoting urban and community trees/forestry programs		Tree City USA, grants to communities to develop community forestry programs, urban tree education programs, Utah Community and Urban Forest Council; need more funding, but did just get a boost
AF	24	Reforestation proper stocking, and density management of managed stands	Includes AF-25, AF-27	Proper density management
AF	31	Modified biomass removal practices - focus on Biomass BMP	Includes AF-39	Need to develop markets for smaller diameter product; biomass Best Management Practices (BMPs); high-priority (still not firm agreement on best approach for biomass)
AF	32	Fire management and risk reduction programs		Very important; can lose sequestered carbon catastrophically; burning woody biomass is considered to be carbon neutral; can be used to offset fossil energy; also climate change may increase the fire problem; issue of funding

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AF	33	Forest health (pest/disease, invasive species) risk reduction programs		Healthy forests take up carbon and sequester it and are less likely to lose it catastrophically; cheat grass increases risk of fire; concerned about funding
AF	36	Watershed management programs – stand retention, enhancement and management	Includes AF-34, 35, and 37	Watershed initiative
AF	40	Expanded use of wood products for building materials		This strategy helps by sequestering carbon for a long time; higher-priority
AF	42	Expanded use of Forest biomass feedstocks for energy production (fuel switching)		Important in electric generation market; could enhance incentives such as tax credits; wood biomass is carbon neutral and renewable; *Oregon prohibited from purchasing CO2 intense electricity, caused problems for IPP which is considering co-firing w/ wood waste
CC	1	GHG registry	Includes CC-1, CC-15, CC-22	high priority; topic for policy workshop
CC	2	GHG reduction target		high priority; topic for policy workshop
CC	4	Public education and outreach on climate change	Includes CC-7, CC-16, CC-23, CC-24, CC-25	high priority
CC	6	Research and Development; specify low/no carbon energy strategies		high priority
CC	8	Climate Adaptation		high priority; focus on water
CC	9	Regional/state cap & trade	new option; includes CC-17, CC-18, CC-19	high priority; topic for policy workshop; now directly relates to 5-state proposal; address pros and cons of participating; may consider a separate trading block
CC	10	Coordination With Other C5 Policies	Revised; includes CC-11, CC-12, CC-13, CC-14	need to coordinate with other policy objectives
CC	20	CO2 Tax	MOVED from ES-27	topic for policy workshop; getting more attention lately; high priority
CC	26	Evaluate existing proposals at the regional and federal levels; consider Utah endorsement of proposals	new option	
ES	A	Develop a significant amount of renewable energy resources		Sensitivity analysis at varying levels of RE generation
ES	1	Renewable Portfolio Standards		
ES	2	Public Benefit Charge		Enabler, not a "what"; RE or EE?

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		Funds		
ES	3	Tax Credits and Incentives	ES-3, ES-17	Enabler, not a "what" (A-E)
ES	4	Green Power Purchases and Marketing		
ES	5	Significantly encourage RE development through creation of RE zones (streamlined permitting, zoning, siting, etc.)	ES-5, ES-6, ES-46,	State and local government policies to support RE development
ES	31	Pricing and metering strategies, including net metering	ES-30, ES-31, ES-33	Including advanced metering to encourage RE development
ES	B	Develop CO2 geologic sequestration technology and policy		Provision of sequestration for large, high-density CO2 streams
ES	13 a	Conduct the necessary geologic research and engineering to capture a significant amount of current and planned emissions		Could be an item for legislative action
ES	13 b	Develop policies and legal framework for carbon sequestration		Liability, permitting, leases; are existing policies in place?; March 1 EPA interim guidance on CO2 sequestration UIC Program Guidance #83
ES	13c	CO2 transmission issues		
ES	C	Develop and deploy advanced generation technology		
ES	9	Waste to Energy	Includes ES-9	Including landfill gas; address accounting issues regarding CO2 emissions from waste-to-energy
ES	15	Advanced fossil technologies that utilize CO2 capture (e.g. IGCC, chilled ammonia, oxy-fuel technology, etc.)		
ES	16	Fuel Cell Development Incentives		
ES	45	Incentives for hydrogen development		
ES	D	Modify/replace existing plant to improve efficiency/reduce CO2 emissions		
ES	24	Generation Performance Standards		
ES	20 a	Repowering plant w/ combined-cycle technology		
ES	20	Efficiency improvements		

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	b			
ES	20c	Switch fuel from coal to low-carbon fuels (e.g. natural gas, biomass)		nuclear addressed under ES-21, consider including lower-carbon coal in this option
ES	20d	Retrofit plants w/ CO2 capture		
ES	20e	Retire old plant; build new low-carbon greenfield plant		
ES	E	Promote CHP-distributed generation		
ES	22	Combined Heat and Power Incentive Policies and Barrier Reduction		Possibly include Brownfield Redevelopment
ES	F	Improve efficiency of electric transmission and distribution system		
ES	29	Remove Transmission and Other Barriers for Renewable and other Clean DG	ES-28, ES-29	Remove transmission, interconnection, and other barriers for RE and clean DG
ES	36	Transmission System Upgrading		
ES	37	Reduce Transmission and Distribution Line Loss		Losses cluster
ES	G	Reduce GHG emissions associated with energy extraction		
ES	19	GHG emissions reduction from fuel combustion in energy extraction operations		Not one of the larger states (e.g. CA, NM, CO)
ES	44	Leakage reduction program		Losses cluster
ES	H	Misc. energy sector items		
ES	7	Research and Development (R&D)	ES-7, ES-18	Fund targeted R&D programs that are needed to reduce GHG emissions
ES	32	Remove Utility Rate Barriers		
RCI	2	Cross-sectoral Energy Efficiency Funds or Requirements for DSM (e.g. Public Benefit Funds, Utility Savings Goals, or Energy Portfolio Standards)	From RCI 2, 12, 15, 17, 21, 38, 41, 48, 61, 63, 65	Include weatherization, low-income, include tracking for savings for EPS
RCI	3	Voluntary or mandatory efficiency targets	Includes RCI 2, 12,	Beyond utilities; includes the whole state

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			38, 63	
RCI	4	Regional Market Transformation Alliance	Includes RCI 13, 39, 64	Eg. NW EE Alliance
RCI	6	Green Power purchasing	Includes RCI 30, 52, 75	Enhance, expand, consider munis
RCI	7	Rate Design	Includes 56, 80	Coordinate w/ energy supply sector
RCI	8	Distributed generation with combined heat and power systems	Includes RCI 53, 76	Coordinate w/ energy supply
RCI	9	Distributed generation/renewable energy applications; net metering	Includes 11, 29, 36, 51, 55, 60, 72, 79, ES-10	includes incentives
RCI	10	State Appliance Efficiency Standards	Includes RCI-35	
RCI	19	Solar hot water and PV codes for new buildings	Includes ES-11, ES-12	May include other RE
RCI	28	Energy Management Training / Training of Building Operators	Includes 49, 50, 70, 71	Includes benchmarking and tracking
RCI	31	Government lead by example	Includes CC5, Includes RCI-58	includes shared savings program for govt. agencies, includes encouraging other levels of govt. to participate, government procurement
RCI	36	State Promotion and Tax or Other Incentives for Efficient Products (e.g. EnergyStar)	Includes RCI-11	Removed RE and focus on EE
RCI	47	Increased use of blended cement	Includes 78	
RCI	54	Fuel Switching to less carbon-intensive fuels		Industrial sector action
RCI	57	Reinvestment Fund		eg. revolving loan program
RCI	66	Focus on Small and Medium Enterprises (SMEs)		
RCI	81	Participation in Voluntary Industry-Government Partnerships		
RCI	82	Process Changes/Optimization	Includes AF-44	Including productive use of waste heat
RCI	a	Water pumping, treatment, and use efficiency	Includes RCI 34, 59, 85	

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RCI	b	Incentives for Improved Design and Construction (e.g. Energy Star, LEED, green buildings, expedited permitting)	Includes 11, 18, 26, 43, 44, 67	include white roofs, roof gardens, landscaping, shade trees
RCI	e	Improved building codes to reduce life-cycle energy consumption	Includes 22, 23, 24, 25, 45, 46, 69	includes new construction, training and enforcement
RCI	g	alternative gases/leak reduction	Includes 40, 83, 84	Includes industrial sector
RCI	i	waste/recycling		coordinate w/ cross-cutting
TL	1	Develop mass transit		Already in long-range planning for Wasatch Front; need fully-integrated, supported mass transit system w/ adequate funding; longer-term strategy; needs to be done in conjunction with land-use planning; government programs (Eco-pass); educational opportunities; other incentives; State can assist with rights-of-way, park and ride lots, traffic signals (pref. to high-occupancy vehicles); Zip Cars/Freedom Cars (shared ownership); bike carriers, pedestrian-friendly cities
TL	2	Promote clean/low-carbon fuels and technologies (including advanced vehicles and low-carbon fuel infrastructure and distribution network)	Includes TL-3, TL-7	Infrastructure limitations have made this difficult; state agencies and school districts may be a place to start; can use tax incentives, HOV lane access, parking incentives, etc.; may not be low-hanging fruit (need analysis); include/begin with state lead-by example
TL	4	Clean Car Program/Other EE program (CA standards)		Politically controversial; may be a lower-priority item
TL	5	Smart Growth	Includes TL-14	Important, but longer-term strategy; planning, infill development, increased density, transit-oriented, pedestrian-friendly (e.g. Portland measures), see/adopt Envision Utah; also includes education; could include incentives; issue of congestion
TL	6	Idle-reduction program/truck stop electrification		NOx reduction benefits, truck stops, school buses; funding allocated to this from WFRC (they made an estimate criteria pollution reduction in their report (Sapp Brothers); Colorado program w/ school buses (APU for buses); Utah Clean Cities is working w/ NEF to provide educational materials for idle reduction; UTA block heats canopies and has drivers shut buses off after 10 minutes; look into possibility of working w/ local municipalities; consider DOE/EPA (CMAQ, bus funding) grant funding
TL	8	Study feebates (fee on high GHG vehicles; rebate on low GHG vehicles)		Politically difficult, but warrants further study; this is being considered in CA; need to consider impacts to low-income Utahns; need to consider life-cycle (or can this just be covered by fuel economy);
TL	9	Pay-as-you-drive insurance		Study and consider pilot program; needs further study in conjunction with insurance industry

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TL	12	speed limit for commercial trucks/other lower speed limits/enhanced enforcement of speed limits		Politically difficult; warrants further study; American trucking association came out in favor of mandated 68mpg (safety/fuel economy)
TL	15	Telecommuting/trip reduction incentives	Includes TL-16	Includes carpooling and ridesharing
TL	a	Education program	Includes TL-10	Include vehicle choice, transit options, vehicle maintenance, driving habits/speeding, tire inflation
TL	b	Develop planning criteria for school facility siting		
TL	c	Explore Flex-car/Zip-car program options		Needs further research; didn't work in Denver
TL	d	Support Local Farming/Buy Local	Includes AF-6, AF-20	This is an issue of reducing transportation and resulting emissions

Sector Abbreviations:

AF = Agriculture/Forestry

CC = Cross Cutting

ES = Energy Supply

RCI = Residential, Commercial, Industrial

TL = Transportation/Landuse